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Rural Lines

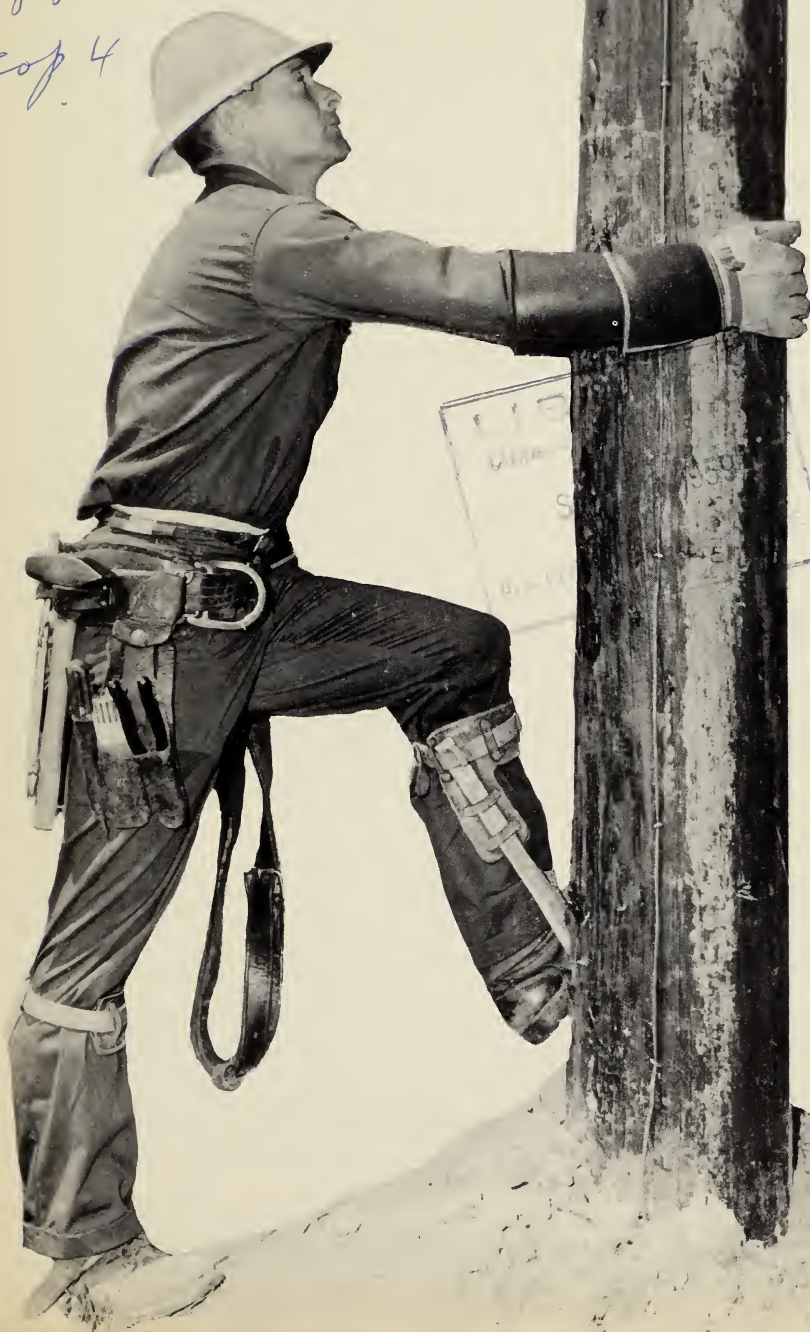
RURAL ELECTRIFICATION ADMINISTRATION • U. S. DEPARTMENT OF AGRICULTURE

SEPTEMBER

1959

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**DO YOU
KNOW
YOUR
POLES?**

Page 3



A Message from the

ADMINISTRATOR

As I travel about the country and see the results of REA telephone loans, it is difficult for me to realize that the rural telephone program is scarcely 10 years old. It took some time to get the loan activities organized and then more time for borrowers to build their new dial systems and put them into operation. Considering all this, it is amazing to record that 531 systems had already placed in service 2,062 modern dial exchanges by last June 30 with REA financing.

The handcrank wall telephone has become an antique with a collector's price to match. The percent of farms with telephones now is about 65—as against 38 when the REA telephone program began. This is solid progress.

To mark the 10th anniversary of the telephone program, we will hold a ceremony on October 28, 1959, in Washington, D. C. This will be at 2:30 p. m. in the Departmental Auditorium, on Constitution Avenue between 12th and 14th Streets N. W.

The public is invited and a special invitation is extended to borrower representatives and friends in all segments of the telephone industry who have helped provide better telephone service for rural people. While the ceremony is planned primarily for REA employees, we do not feel that it would be complete without “grass roots” representation.

Our rural electric friends will want to know that we are planning a similar ceremony to mark the 25th anniversary of the rural electrification program next year. This will be held on May 11, 1960, also in Washington, D. C.

We hope that many of you will be able to join us in one or both celebrations.

Rural Lines

Administrator.

John H. Howard, Editor. Contributors to this issue: C. H. Arveson, C. W. Chastain, Austin L. Gaver, Virgil R. Hassler, Louisan Mamer.

Cover Page: This lineman is Joseph Norris of the Southern Maryland Electric Cooperative, Hughesville, Maryland.

A storm struck across the prairie at night, suddenly and furiously. It brought a trouble call for the co-op crew the next morning. A distribution line was down where it crossed a cow pasture south of town. The line crew found three registered Hereford cows dead in the pasture, alongside the sagging hot line—electrocuted. A pole had snapped off about half way up, just high enough to bring the hot wire down almost, but not quite, to the ground.

The pole looked strong enough on the outside. Inside it was riddled with termites. Adjacent poles looked strong too, but boring proved some of them also to be termite-riddled.

Incidents like this one, costly to rural utilities, prove that many REA borrowers do not give enough attention to poles. The crying need for better pole inspection and maintenance inspired REA engineers and borrowers to sparkplug the Wood Utility Pole Institute held recently at the University of Wisconsin. Joseph E. O'Brien, chief of the Electrical Engineering Division, REA, and Frank Linder, chief electrical engineer of the Dairyland Power Cooperative, La Crosse, Wis., served on the planning committee. Clarence H. Amadon and R. Thomas Rogers, timber consultants for REA were speakers and panel members, as was Walter J. O'Neal, REA timber specialist.

Almost 100 people attended: they were prominent members of electric and telephone utilities; faculty members of forestry schools from several universities; and representatives of REA-financed rural utilities. Those attending will, in turn, organize pole schools on a regional basis, with the eventual aim of indoctrinating managers and line foremen in the selection, treatment and inspection of new



DO YOU KNOW ENOUGH ABOUT POLES?

By C. H. Arveson, Timber Specialist

*They are any borrower's
biggest plant investment.*

poles; and in the inspection and supplemental treatment of poles in line.

The 4-day session embraced several subjects: new poles—their specifications, characteristics, strength, and natural and imparted durability; pole manufacture; preservatives and methods of treatment; inspection; and especially the maintenance inspection of poles in service. Demonstrations on poles in place were made at the U. S. Forest Products Laboratory Test Plot near Madison. Certificates of attendance were awarded by Paul J. Grogan of the University Extension Division at the close of the Institute.



Left to right:
W. Roy Yeager,
Western Electric;
Prof. A. H.
Bishop,
Syracuse U.;
and
Clarence Amadon,
timber
consultant.

Wood poles are big business. They account for about one-third of the total investment in utility pole lines. New line construction and replacement of existing poles in the Nation's power and communications systems takes about 6 million new poles each year, an investment of more than \$300 million annually. It pays to put only good poles in the ground—and to maintain them—to get the best safe service possible out of them.

While all utility people realize this, there are relatively few men in the business who can claim to be authorities on wood poles. This is perhaps not so strange. Poles were cheap in the past. Old S. F. B. Morse used chestnut poles on his first telegraph line. They were naturally durable, and they grew in a vast forest from the Atlantic to the western prairies. Blight killed the chestnut, and blight

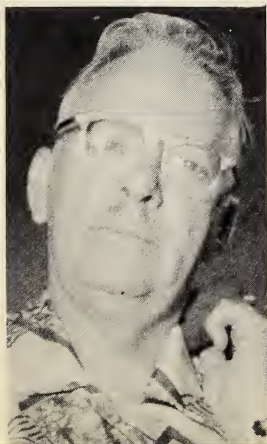
and overuse have eliminated other naturally durable species from the pole market. With the development of the wood-preserving industry other species of timber could be used, though the first cost of poles greatly increased.

NEW POLES

The wood pole is still readily available, and it has many other advantages. It can be climbed easily with simply-made climbers. It has a high electrical resistance. It is easy to



Left to right: **Everett C. Dill,** **East River**
Electric Co-op, Madison, S.D.; **Tom**
Rogers, timber consultant; **and John**
George, Pocahontas County Rural Elec-
tric Co-op, Pocahontas, Iowa.



Norton Davis,
manager,
Plains Electric
Cooperative,
Albuquerque,
N. M.

make attachments with simple tools. The wood pole lasts a long time when properly treated and is easy to get rid of when no longer useful.

Practically all the poles in any borrower's lines were once trees of nine species: Douglas-fir, two species of cedar, western larch, or one of five

**Frank Linder,
Dairyland Power
Co-op (left);
George K. Ditlow
and Joseph E.
O'Brien, REA.**



species of pine. About 80 percent of the poles used by borrowers are southern yellow pine because they are more readily available to more borrowers.

The species used, however, depends largely on the freight rate from the source of supply. Douglas-fir is used mostly in the Pacific Northwest, though, some large fir poles are shipped as far east as the Atlantic coast. Western redcedar also grows in the Northwest and is used extensively in the northern and western states. Western larch, an exceptionally strong wood, is used in the same area. It is a fairly recent addition to pole timbers. Lodgepole pine grows in the Rockies, and finds its greatest use in that region. Northern whitecedar, red pine and jack pine are used around the Great Lakes and in New England. A few ponderosa pine poles are used in the West.

If a pole-size tree is straight and strong, with a minimum of defects, it may start a new career in a pole producer's treating plant. Not all trees of suitable size will make good poles, so they are selected in the forest. Species also vary as to strength, durability and in the amount of treatable sapwood. Some, like northern whitecedar and western redcedar, have thin sapwood but naturally durable heartwood. Others have relatively thin sapwood over non-



**Wisconsinites Prof. Lee Crandall (left)
and Leonard F. Hillis, Institute co-
ordinator.**



**Wm. C. Wingard, manager, Central Ala-
bama Electric Co-op, Prattville (left),
and John Rixse, REA.**

**Charles
E. Ham,
Wheat
Belt
Public
Power
District,
Sidney,
Nebr.**





Frank Korynty (left) and Miles L. Handy of the Oliver-Mercer Electric Co-op, Hazen, N.D., with lodgepole pine from their area.



Inspecting a damaged lodgepole are L. P. Beverage (left), Four County EMC, Burgaw, N.C.; and Cecil E. Viverette, Blue Ridge EMC, Lenoir, N.C.

durable heartwood, such as jack pine and lodgepole pine. The southern pines have thick sapwood and thus obtain a deep treatment. Specifications of the National Electrical Safety Code and the strength ratings by species of the American Standards Association determine the circumference for each class and length of pole. The American Wood-Preservers Association sets standards for treatment.

In the seven largest classes, each species must have a minimum circumference at 6 feet from the butt end, depending on length, and also a minimum circumference at the top. The three smallest classes count the top dimension only, letting natural taper determine the butt circumference.

The pole manufacturer first runs a prospective pole through a shaving machine, which trims the knots and removes all bark. Then they are

usually stacked to air-dry, or season. Before treatment, the poles are again examined. They are rejected for any sign of decay; for too large checks, shakes, splits or knots; too much twist; compression wood; too crooked; scars at the ground line, and various other defects.

PRESERVATIVE TREATMENT

Preservatives increase the life of poles many times over. Usually heartwood is untreatable, and treating all the sapwood is the objective. It is important that an armor of treated wood be provided around the vulnerable heartwood to protect it from fungus or insect attack. Treatment varies according to species and location or use. The actual preservative may be either creosote or pentachlorophenol solution, at the purchaser's option.

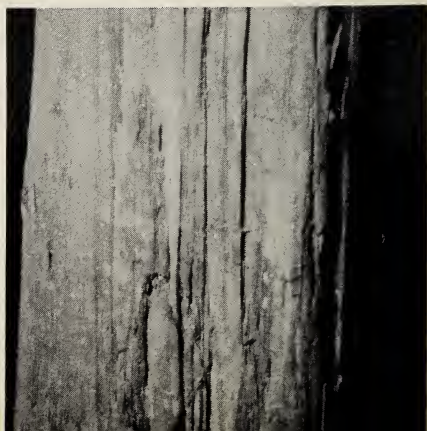
IN-LINE INSPECTION

Inspection of poles in line after a

Southern pine pole with surface rot at groundline.



Sap rot in western redcedar.



**C. H. Arveson
points out
damage in a
test plot pole.**

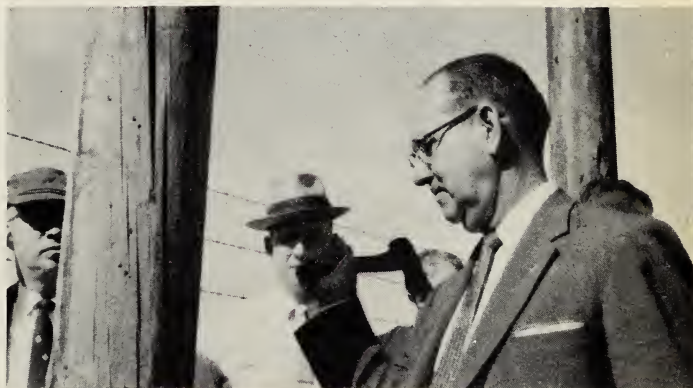


number of years of service determines whether a pole is in good condition yet, whether it needs replacing or stubbing, or whether any decay may be arrested.

Wood-destroying fungi consume poles slowly, reducing their strength. Deterioration of properly treated poles is very slow. If thick sapwood poles are not thoroughly impregnated, they may decay early in the untreated



**Walter O'Neal
demonstrates
increment borer
(top picture);
how to tap to
determine
presence of
internal decay
(middle picture);
and how to dig to
determine extent
of groundline
decay on a
lodgepole pine.**



inner sapwood. Internal decay may also occur in poles with well-impregnated thin sapwood, if the poles were not adequately seasoned and should later develop deep checks. Woodpeckers also may expose untreated heartwood to decay.

Fungi attack poles when conditions are favorable. They need mainly moisture and warmth. They do not attack wood that is either constantly wet or constantly dry. A pole in a swamp may decay just above the water line, but not below. A pole set in porous soil decays from an inch or two below the groundline downward to 18 inches and sometimes deeper.

Carpenter ants sometimes take up residence in cedar poles in northern states, entering the pole at a cavity or point of decay. They leave fine sawdust outside, and are thus easily detected. Termites eat wood, and cause internal destruction of poles. There are three types: subterranean, damp-wood and dry-wood termites. The first is most common and often attack poles where some decay already exists. They are best controlled by the same treatments as used against fungi. Where dry-wood termites are believed to be a hazard (mainly in the Southwest), full-length treated poles and treated crossarms must be used.

The extent of lightning, fire or woodpecker damage is usually easy to ascertain.

Pole maintenance requires certain


equipment, including a shovel, prod, sounding hammer, increment borer, circumference measuring tape, charts and tables and forms for recording the inspection findings, and a supply of preservative.

The inspector examines the above-ground section first, for any damage from lightning or woodpeckers, and for split top or shell rot. Then the pole is sounded by tapping it lightly with the hammer and if the pole is decaying internally, it will sound dull or hollow. However, the sound isn't always sure proof.

So the inspector uses an increment borer, boring into the center of the pole. Then with an extractor he removes a core sample of the inside of the pole. Crumbly wood shows the pole is deteriorating.

Proper groundline inspection requires digging away the soil all around the pole to a depth of about 18 inches, which also enables preservative application.

Detailed methods of inspecting standing poles and treatment are thoroughly covered in REA Bulletin 161-4, Pole Maintenance, available from REA. There is also available from REA a color motion picture, Pole Inspection and Maintenance. Both recommend a constant program of pole inspection and preventive maintenance for all borrows, and borrows with pole trouble may also avail themselves of the services of reliable timber specialists. It pays off in safety, economy and efficiency.



**Class
attending
outdoor
demon-
stration at
test plot.**

Rural Lines



ILLINI MEMBERS ARE HEAVYING UP

A couple of years ago the Illini Electric Cooperative of Champaign, Illinois, was having trouble. Their service trucks were being kept too busy running out to the farms of their members. Members were overloading their circuits, which were installed back in the days when no one anticipated the need for more than a 60-ampere entrance panel to serve the needs of a Champaign County farmstead.

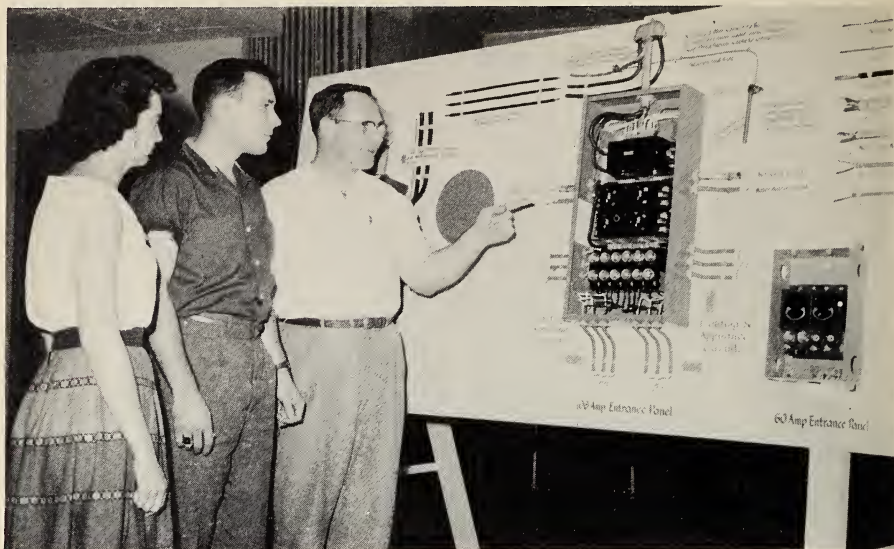
Champaign County is 18 inches of rich black loam topsoil, unencum-

bered by rock or timberland, in East Central Illinois. Outlanders from hilly country frequently think it to be flat as a billiard table, since they fail to see the gentle roll that provides good drainage. Corn and more corn is the product of Champaign County's grain farms, which are among the Nation's most prosperous.

Back in 1938, when the first lines on the Illini Co-op's 1500-mile-long, 3600-member system were energized, no one dreamed that the average consumer would use just under 450 kwh per month only 20 years later. They didn't anticipate washer-dryers, TV sets, air-conditioning, pig and poultry brooders, and yard security lights.

A problem was developing 2 years ago for Manager N. B. Elliott. The old wiring in most members' homes was becoming unsafe from overloading, and it was also costing a lot of time and money for service calls. Illini's President C. V. Swanson and the board of directors agreed, and took the problem off the hook by passing a resolution to promote the sale of booster panels and heavier entrance panels.

The incentive furnished by the Illini co-op for its members to heavy up their premises with sufficient capacity is a 150-ampere meter installed by the co-op at no cost to the member. The minimum requirements for this free meter installation are a 100-ampere entrance panel (four 230-volt fused circuits; eight 115-volt fused circuits); No. 2, three conductor entrance service cable and three No. 4 service wires (or the equivalent) from the metering point. Commercial rate members can also qualify by installing an entrance panel, entrance serv-



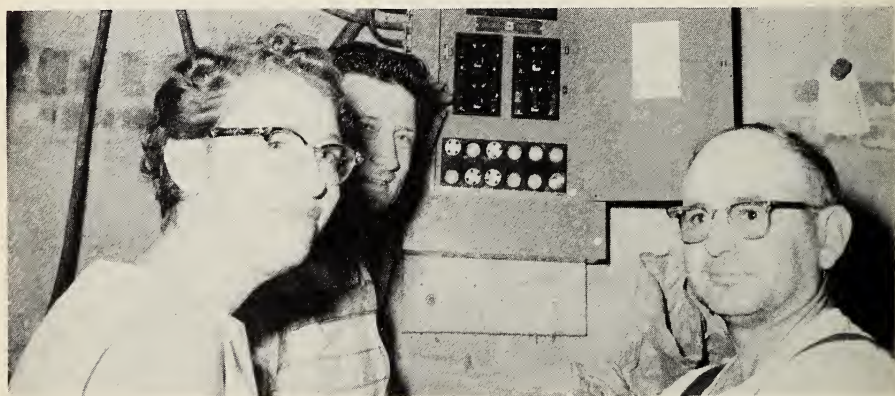
Assistant Manager W. R. Smith points out the advantage of higher capacity to members on the display in the co-op lobby.

ice cable and conductor heavy enough to meet the specifications of the National Electrical Code for the particular requirement.

Through talks to farm groups, and by personal contacts, the co-op has contacted 700 members during the past year and a half. In that time, they have installed free meters on almost 300 farms on the system,

whose member-owners have increased capacity for electric usage.

A large display board in the co-op headquarters lobby serves both as an attention getter and as a chart by which the advantages of heavying-up may be explained to members. The co-op also reproduced the display in a four-page offset pamphlet which explains the free offer.



Howard Schweighart, general line superintendent for the Illini co-op, (center), points out circuits of their new 200-ampere box to Mr. and Mrs. Otto L. Wishall, Jr., Hereford cattle breeders of Tolono.

POWER

use exchange



DAIRY FAIR—As a “salute to the dairy industry,” Northfork Electric Cooperative, Sayre, Okla., held a Dairy Equipment Fair this summer, and published two special dairy issues of *Northfork Sparks and Flashes*. The co-op sent special invitations to 150 operators of Grade A dairies in its area. More than 30 exhibitors cooperated to make the fair a success. Fair visitors saw displays of the latest dairy and feed-handling equipment set up by cooperating manufacturers, distributors, and dealers, and also several displays of household equipment. Home appliance dealers featured special offers on air-conditioners and refrigeration equipment to tie in with Northfork’s Freezer Festival. The co-op offered a \$25 cash bonus on purchase of a new home freezer with a minimum capacity of 7 cubic feet, and \$15 on purchase of a refrigerator-freezer with minimum freezer capacity of 4 cubic feet. Similar offers applied on trade-ins where capacity was increased as much as 4 cubic feet. In its air-conditioning promotion, Northfork offered free labor and materials on electrical installation of a 1-ton or larger reverse cycle air-conditioner or a heat pump.

HEAT CONTEST—In the electric heating guessing contest sponsored by East River Electric Association, 1797 entries showed a wide range of estimates on cost of heating electrically. The winning guess, however, missed the exact amount by only 15 cents.

INSULATION BLOWER—In its July newsletter, Little Ocmulgee Electric Membership Corp., Alamo, Ga., announced the Bronze and Gold Medallion standards adopted by the co-op

and showed three new Gold Medallion Homes on co-op lines. In its efforts to promote all-electric homes, the newsletter announced these new aids to members: “We have been able to persuade most all our members building new homes to fully insulate them. But we have several thousand existing homes with the problem, the directors have authorized the management to purchase a machine for blowing insulation in walls and to stock the material to insulate. This is going to be a tremendous saving to our members and a service they will long remember. . . So whether you have a new house, or old, we can assist you with insulation.”

ANNUAL MEET—Nearly 10,000 people saw more than 100 items of feed handling equipment displayed at the combined Materials Handling Field Day and annual meeting held on the headquarters lawn of Sioux Valley Empire Electric Association, Colman, S. Dak. The Materials Handling Field Day, co-sponsored by *Successful Farming* magazine, began at noon and continued throughout the afternoon. Exhibits also included water-using and electric heating equipment and insulation materials. An electric cooking and freezing demonstration began at 2 p.m., and registration followed at 3 p.m. with members receiving dividends as they registered at 7 desks in the co-op garage. Beginning at 5 p.m., co-op employees served 7,500 people a free beef barbecue supper. The business meeting from 7-9 p.m. included co-op prize drawings, and a presentation of ideals and objectives of the cooperative by 4-H club members.



Electrification left its brand

on northeastern colorado's cattle business

Thirty years ago Sterling was a little county seat cow town in the South Platte Valley of northeastern Colorado. It was lively enough when the braceros came up from Mexico to work the sugar beets, or when ranchers loaded trainloads of cattle for the long haul to Corn Belt feedlots. Sterling, in those days, however, didn't have the year-round up-and-going bustle it has today.

They feed cattle nowadays on farms and ranches around Sterling instead of shipping them. Sterling is also in the center of a producing oil field. The oil and cattle businesses have grown because the country around Sterling has available electric power from the Highline Electric Association. The Highline, in turn, has prospered from this use of electricity.

Whenever Dave Hamil vacations in Colorado, he is apt to be a guest at a Highline board meeting.

The old timers who helped organize the Highline didn't expect or anticipate the prosperous growth the co-op has made.

The Highline filed the first loan application with REA to serve a sparsely settled, dry land farming region. It had to be a big system to work. Some ranchers who paid their \$5 membership fee, according to Eph C. Johnson, didn't really think they would really get electricity. They were merely full of Western goodwill and neighborliness, and wanted to encourage the thing. A few fought it. Harry Andrews told of one irate lady who set her pack of hounds





Dave and Don Hamil look over a corral full of whiteface steers on feed.

have one of the several large feeding operations in the Sterling area.

They operate more than 4,000 acres, of which 880 acres are under irrigation. It is still a rugged life, but the Hamils make electricity do most of the work, from mixing feed for 2,000 head of Herefords to pumping irrigation water. The electric bill runs well over \$100 per month.

"With modern ranching", says

Dave Hamil astride one of his brother Don's saddle horses. The Hamil brothers claim there isn't a job on the ranch they can't do themselves.

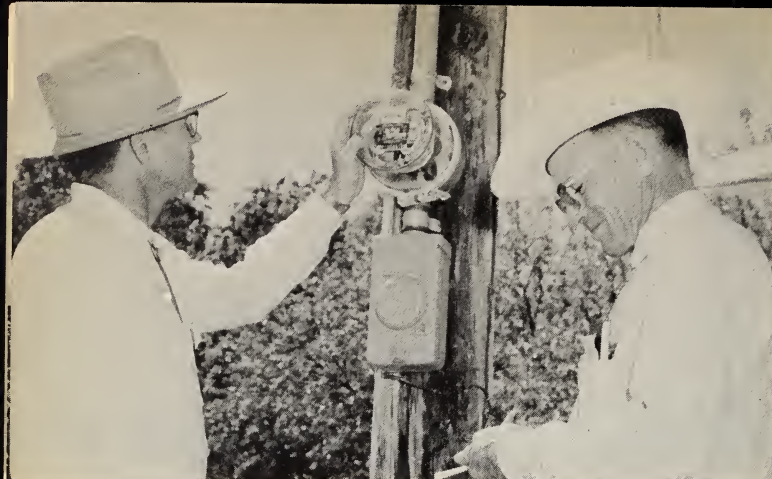
loose on a field engineer. Most ranchers signed up, said Fidele Guenzi of Sterling, because the organizers were persistent and enthusiastic. One who helped him organize the B Section was young David Hamil, who became a member of the board.

Dave Hamil always wanted to be a cattle rancher. When he graduated from college he went back to Sterling. He was getting nicely started when his brother Don got through school; Dave persuaded him to go into partnership with him. They've been partners since, in a closely knit family relationship.

When Don got married, there was no central station electricity available for his ranch house. It furnished plenty of incentive to organize.

The Hamils were quick to realize that electricity could help them expand their cattle feeding. Today they



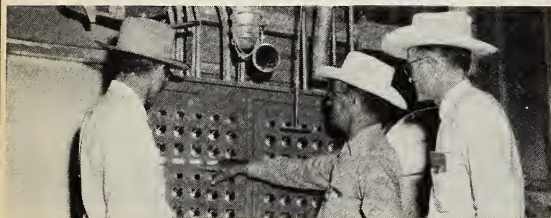


Dave Hamil reads the meter while his brother Don writes out the meter card to send to the Highline.

Don Hamil, "you're a one-man band. Veterinarian to keep the cattle healthy, irrigation and soil specialist, dietician to produce a weight-gaining diet, and an electronics engineer to understand the panels of electric switches. It takes 100 horsepower of energy to select and mix feed, but you could never get the quantity and quality of mix doing it by hand. It

is important in the competitive business that cattle feeding has become."

Ranchers like the Hamils have helped boost Highline's average kwh consumption from slightly more than 50 per month in 1941 to more than 300 now, which has produced enviable net margins for a co-op in country once thought to be too thinly settled to electrify.



Neighbor John Lebsack operates mixing panel which feeds 7,000 head of cattle. Electric bill average is \$300 a month. Below: This pump on Hamil ranch irrigates 170 acres.



Dave Hamil discusses plowing with his son Don, college sophomore. The Hamil boys, Don and Jack, spend their vacations and weekends working at ranch.

William Seckler, Atwood rancher, shows off his 250-hp panel, which distributes the power to mix feed for his 10,000 head of cattle.



HARD WORK



IMAGINATION

= POWER SALES SUCCESS

If one-third of the prospects in anyone's sales campaign put their cash on the barrelhead and buy, that's really selling.

That is the record of the East Mississippi Electric Power Association, Meridian, Miss., during a recent 7-months' campaign to sell pressure water systems. Manager John Langan of the East Mississippi co-op says he can't take credit for the campaign's plan, since it was a modification of a TVA plan. Nor does he think that the co-op should take credit for the selling itself, since the sales were made by the seven pump salesmen and well drillers who were cooperating in the campaign. But he is proud of the hard promotional work done by the co-op's two young power use advisors to put the campaign across; and he is proud of the creative work they have done to sell more water systems the year round. Emmett Murray and B. D. Stephens, the co-op's power use men, have applied their imaginations to inventing tools and appliances adaptable to East Mississippi, to motion picture and television scripts aimed at their own audience. It is a combination that has resulted in more electric power for the system's rural consumers.

Both Murray and Stephens are local boys. Murray went to Mississippi State College and then became

a vocational agricultural teacher in a local high school for a couple of years. Stephens was a reporter on the Meridian Star for 10 years before joining the co-op.

The East Mississippi co-op covers four counties, and fringe areas of others. It has over 10,000 consumers on its 3,300 miles of line. One of its principal problems has been losing consumers.

Their consumers have been migrating north. They used to raise cotton on the red clay soil of East Mississippi. Then beef cattle turned out to be more profitable on the year-round pastures. And also the wornout farms are in great demand for tree farms, to grow pulp logs for the growing wallboard industry. Since it is harder to make a living on small farms, there is a tendency for small farmers to sell out their acreages to larger operators for cattle ranches, or to lumber companies. When a small farmer does so, the chances are that he is lost to Mississippi. He usually migrates north to seek a new living at common labor.

East Mississippians believe that if the small farmer's standard of living could be raised, he will be less tempted to migrate. The more of them who stay—the better for Mississippi and the industrial development it expects in the near future,



**Manager
John
Langan
(center)
inspects
some
movie
film
footage
taken by
Emmett
Murray
(left)
and B. D.
Stephens
(right)**

and the better for kilowatt-hour sales, too.

Since power use is pretty much tied to water use, the co-op, along with other co-ops in that area, tied their program to the sale of water pressure systems. Once a farmer has running water, they reasoned, he sees no end to the uses of water, not only in the house, but also on the farm. But a drilled well, with a pressure pump on a concrete slab, isn't exactly an inexpensive item, in the small farmer's budget in that area. When he has been getting along nicely enough all his life with a pitcher pump, or a rope and bucket from a dug open well, he isn't too easy to sell.

The TVA plan, with the help of the State Board of Health and the Home Demonstration Council, was the solution to the sales approach question. On the county level, it required a preliminary get-together of the county sanitarian, the county home agent, leaders of home demonstration clubs, well drillers and pump salesmen, and the co-op's power use people.

The basic incentive offered was a Safe Water System Certificate, printed by the State Board of Health and distributed by the county sanitarians.

The certificate states that the holding family has a safe water system, including an electric water system under pressure, which is protected by a concrete slab to prevent surface contamination.

The home agents were prime agents in pushing water systems. The State Home Demonstration Council had adopted the Water System Contest as the year's leading project for county home demonstration clubs. The contest was based on the highest percentage of Safe Water System Certificates issued per club, and at least 25 percent of any club's membership had to have approved water system certificates to even enter the contest.

The East Mississippi co-op sponsored the contest, and announced in their publicity the incentives in participating clubs: first, second, and third prizes of \$50, \$25, and \$15. The money was put up by pump distributors, well drillers, and water system firms serving the area.

The rest was hard work, plus a lot of imagination. Murray and Stephens held meetings, wrote scripts for the co-op's television program on Station WTOK-TV, made countless trips, on request, to farms to advise them about putting in a water system. It

paid off. During the campaign they contacted personally more than 600 farm families. It resulted in the installation of 228 new pump and well installations during the contest, and in the issuance of 324 Safe Water System Certificates.

Murray and Stephens use motion picture film which they shot themselves in their educational 2-minute commercials, which have, by now, a professional caliber. The co-op uses the half hour program, Silent Service,

which is widely popular in that area. The footage they shoot is on all subjects designed to make the use of rural electric power popular. It is combined with the equipment designs which are dreamed up, built, and demonstrated by the Murray-Stephens team.

"When you show people down here pictures—either slides or motion pictures—of power equipment being used on a model farm in Iowa or Illinois, you are apt to be wasting



An East Mississippi consumer proudly shows off his new water system.

Only the chain is made of metal in this low-cost do-it-yourself grain elevator designed by the East Mississippi power use team.



your time. It may discourage them from the idea of putting in power equipment. When they see a picture with big, expensive farm buildings and all kinds of equipment from commercial sources they immediately think, 'that's great, but I couldn't afford anything that costs that kind of money.' Murray and Stephens found this sort of reaction to stock educational film footage, either from commercial or other sources. Consequently, they have shot a lot of footage, partly to provide an acceptable background for their message,



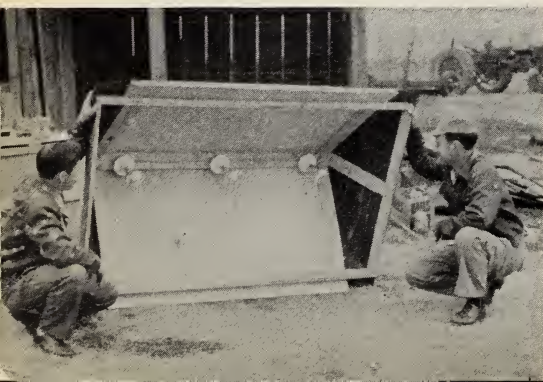


First step in promoting cooling sheds is to help one farmer in the neighborhood erect one.

and partly to show do-it-yourself equipment they designed and built.

Murray and Stephens have brainstormed methods of building equipment, then found materials, made blueprints, which are available from the co-op. These include several chick brooders which only require lamps, elevators built at home of wood and chain, poultry houses, and egg coolers, milk coolers. To demonstrate them they find a farmer who would like to have one, and is willing to pay the cost of materials. The two power-use men, and the local county agent then get together with several neighbors, put up the structure. A film is made, which is used later both on the TV program as commercials and as a visual aid in community meetings. They have found that a farmer will not build a structure from a blueprint without having helped build one himself or having at least seen such a "barn-raising" demonstration in person.

This brooder house is ready for action.



Sometimes they wistfully wish that there were existing film strips more useful to Southern farm audiences.

The power use advisors are trying to anticipate future power sales by gearing their do-it-yourself educational program to economic developments of the near future.

A farmer's cooperative in Clark County is developing a vertical program by putting in 50,000 laying hens. The co-op markets all the eggs at a guaranteed price and furnishes all the equipment necessary, as well as feed. The co-op guarantees the farmer's light bill. The Eastern Mississippi power advisors are servicing all equipment—water systems, brooders, and coolers—put in on these lines, whether commercially sold equipment or do-it-yourself to insure good will and guarantee satisfaction.

A dairy program is getting under way, also. Two big dairy products companies are building plants in Winston County. These will furnish a market for dairy products to local farmers.

Murray developed a water well program in 1955 which paid good results and which was the forerunner of the recent program. He sent out 1800 personal survey cards, with questions designed to find out what kind of a water system consumers had, if they were satisfied or had qualms about the system's efficiency, and if they would like to have a co-op representative call to discuss the possibility of putting in a pressure system. The card was numbered, and to insure a reply, a prize to be given at a drawing, was offered to those replying. The prize, a shallow well jet pump, was given by local pump men. Almost 900 replies were received. Of these, 570 requested that a co-op representative visit them, and 102 pumps were installed in 1955.

WAGONS WEST TO PHOENIX

and the Farm Power Conference in November

The mountain passes leading down into the Salt River Valley of Arizona will be at their autumn best when the caravans of rural electric utility people wind through them on their way to Phoenix and the sixth annual National Electric Farm Power Conference on November 18 through 20.

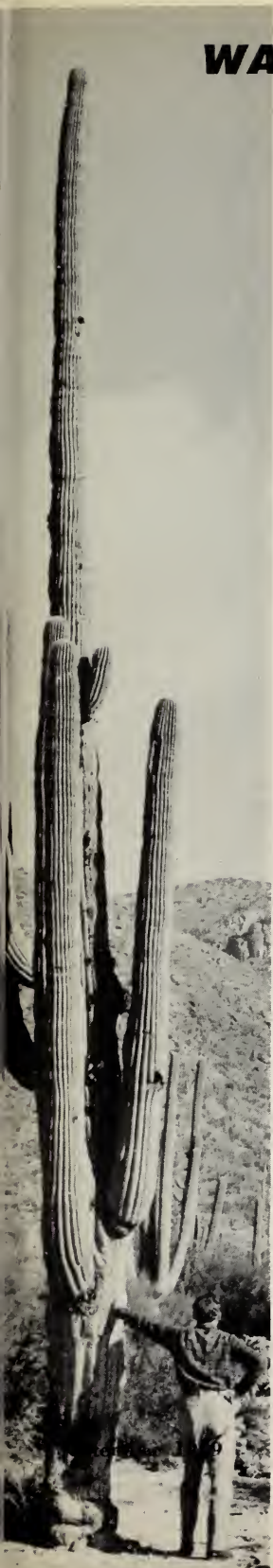
The conference, which will be held at the Westward Ho Hotel, will be addressed by leaders in the fields of electrical equipment manufacturing, agricultural engineering, public utilities, farm equipment, and rural electric cooperatives. Exhibits will line the walls of the Thunderbird Room of the headquarters hotel.

The farm market and the opportunities and responsibilities deriving to utilities because of the growing tendency to cost-cutting automation on farms and ranches will be the theme of the morning sessions. Ross Hill of the Kelvinator Division of American Motors and F. E. Fair, manager of the Eastern Iowa Light and Power Cooperative, Wilton Junction, Iowa, will speak on organizing to sell the farm market at the national and local levels.

Walter Harrison, manager of the Georgia Electric Membership Corporation and president, National Rural Electric Cooperative Association, will open a panel discussion Thursday afternoon, Nov. 19, on "Selling to Get a Greater Return from Your Sales Dollar." J. K. Smith, manager of the Kentucky Rural Electric Cooperative Corp., will be chairman of this discussion. The panel will include Edwin Vennard, managing director, Edison Electric Institute, and Paul Emler, commercial vice president, American Electric Power Service Corp. The presentations on this session will be designed to answer questions on how to sell and what to sell.

J. F. Maddox will preside at a banquet in the evening at which Arizona's Governor Paul Fannin will speak.

Friday's sessions will be devoted to business meetings, election of directors, and to two general sessions. One will discuss lighting the way to brighter profits—with showmanship—and the other will be on the subject of the Total-Electric Home.





WHEATSTONE BRIDGE SCHOOL

"Wheatstone Bridge—An instrument used for measuring electrical properties of cable, conductor and other electronic equipment."

"Yes, I've heard of a Wheatstone bridge ever since I got in the business but everytime I asked anyone about how it operated, they always looked the other way."

These words or others to the same effect were being heard frequently on the general office grounds of Grand River Mutual Telephone Company at Princeton, Mo. The people making these comments were there attending one of the instruction courses in the use of the bridge held recently, when the Missouri borrower played host to rural telephone systems interested in self-improvement.

The school was sponsored by the Northwest District Industry Coordinating Committee of the Missouri Telephone Association in response to the expressed desire of many telephone people.

Grand River had erected a miniature pole line with 250 feet of 51 pair cable. This cable had troubles created in it and several false taped places to throw the student off.

"Professors" were James G. Copeland and Mel Kline of the Southwestern Bell Telephone Company.

Then with the assistance of H. L. Thomas, plant superintendent, and I. R. Thomas, cable splicer, both of Grand River, Mr. Copeland and Mr. Kline aided each of the students in measuring with the bridge. The calculations of many of them were astoundingly accurate.

Forty men representing nineteen operating companies attended the school. Also, V. L. Freeman, REA field engineer for North Missouri, took the course. Two representatives of suppliers attended and took the

◀ **J. C. Copeland of Trenton
opens the first session.**

course for their own edification. Some companies had three or four in attendance. Some students came from points nearly 300 miles from Princeton, such as Wright City, Troy and Sullivan.

The consensus was that the Telephone Association, through its committee, had presented a most worthwhile course and it was hoped that similar schools could be arranged in the future.



**V. L. Freeman,
REA field
engineer**

**Richard Henry of Conception
Junction does his "lab work".**



**Irvin Thomas, Grand River cable splicer,
assists L. H. Gresham with his measuring.**



FIRST TELEPHONE CALL IN 30 YEARS



Early on a spring morning this year, Mrs. W. A. Wall, who used to be postmistress at Broaddus, in the pine woods of East Texas, put in a long distance call. It was unusual because it was the first long distance call made from Broaddus for 30 years. Broaddus had its last telephone service in 1929, until this year.

The first long distance call went to the office of the REA in Washington. Mrs. Wall, along with other dignitaries attending the history-making occasion, talked to Deputy Administrator Ralph Foreman and Assistant Administrator Norman McFarlin. Administrator David Hamil was out of town on business.

Mrs. W. A. Wall talks to Norman McFarlin—first long distance call out of Broaddus—while W. G. Winters, president, and J. B. Swink, commercial manager, of Texas Telephone and Telegraph Company, wait their turns.

Among those attending the celebration in Broaddus was W. G. Winters, president of the Texas Telephone and Telegraph Company, which is providing the new service. An REA loan is helping the Texas company rebuild all its 45 exchanges with modern dial equipment, as well as add five new exchanges. Broaddus is the first of the new exchanges to be cut over.

The new system is a far cry from the old one, built by J. A. Wall in

1910 and first operated by Drew Wade, who also was among the dignitaries attending the cutover. In the old days a long distance call was completed by a series of simple connections. Mr. Wade called T. A. Wall in Altonia, who would connect him with another switchboard operated by Robert Pinkston in Chireno. Mr. Pinkston would connect the Broaddus subscriber with the toll center and thus the person to whom he wanted to talk.

The old exchange passed through several hands until 1929. A Mr. King, who owned it then, died. When his estate was settled, the telephone

The new dial office in Broaddus is a dandy—fire-proof, dustproof, and air-conditioned.



system was sold and moved from Broaddus.

Long distance service on the new system is provided by microwave, from a tower at Broaddus connecting with another at Huntington, across a new made lake. The lake is expected to bring into being a thriving resort business in the Broaddus area. The microwave system is the first to be installed in Texas through REA financing.



He Believes In Hard Hats

Samuel C. Messick believes in hard hats. He is willing to tell any of his fellow employees at the Delaware Electric Cooperative, Greenwood, Del., that a hard hat can save their lives. He knows from experience.

In 1957 Mr. Messick was among those working around a new substation at Frankford, Del., when a 14-pound coffin-hoist fell from a structure 10 feet above him. It could have killed him if he had not been wearing his hard hat. He was wearing it, though. It dented the hat, but saved him from the proverbial hole in the head which he didn't need.

Messick (right) shows his life-saving hard hat to Wm. H. Stephens, safety director.

One day last year Mr. Messick was working with a clearing group dislodging a tree. The tree fell his way before he could get out of its path. He was struck in the head by a limb about 3 inches in diameter, big enough to be lethal. Once again, he was wearing a hard hat and was uninjured.

Having had his life saved twice by hard hats, Mr. Messick never works without one. He'll tell any one that they are one of the most useful pieces of wearing apparel ever devised.



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problems with your city neighbors
during Farm-City Week, November 20-26